DOCUMENT RESUME

ED 230 300 PS 013 578

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TITLE Effects of High-Order Rule Instruction on the Development of Social Problem Solving Skills in Preschool Children.
SPONS AGENCY Wisconsin Univ., Madison. Graduate School.
PUB DATE 82
GRANT 17074
NOTE 24p.; Best available copy.
AVAILABLE FROM Joseph T. Lawton, School of Family Resources and Consumer Sciences, Child and Family Studies Program, University of Wisconsin, Madison, Wisconsin, 53706.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Advance Organizers; Comparative Analysis; *Instruction; *Interpersonal Competence; *Preschool Children; Preschool Education; *Problem Solving; Prosocial Behavior; *Skill Development

ABSTRACT

The development of social problem-solving skills in preschool children (namely, cooperative play, sharing, taking turns, understanding another person's feelings, helping, and the verbal resolution of conflict) was assessed following instruction under three conditions. A total of 35 children, of whom 18 attended a formally structured preschool program (Ausubelian) and 17 attended an informal program (Piagetian), were randomly assigned to three experimental groups. The first group received advance organizer instruction in general strategies for using the six target social problem-solving skills, followed by related activity sessions. The second group received instruction in particular instances of each skill in a sequence of related activities, while members of the third group were introduced to these skills during sociodramatic play activities. Following instruction, members of the first and second treatment groups were significantly better at using these skills than were those participating in the third group; in addition, the first group was significantly better than the second group at skill use. There was strong internal consistency of performance among posttest tasks for the first group, as compared with performances on tasks by the latter two groups. (MP)

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Effects of High-Order Rule Instruction on the Development of Social Problem Solving Skills in Preschool Children

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PS013578

Footnote

In the context of this investigation, part of a longitudinal project investigating concept development in preschool children, the second author completed her Ph.D. dissertation in partial fulfillment of the Ph.D. requirements, submitted to the University of Wisconsin under the direction of the first author. The research was supported, in part, by a grant from the University of Wisconsin Graduate School, No. 170704. The authors would like to thank Jacqueline Leckwee and Ann McAllister, head teachers of the two preschool programs, Jane Weier who typed various drafts of this manuscript, and, not least, the children who took part in the study.

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Abstract

The development of social problem skills in preschool children, namely, cooperative play, sharing, taking turns, understanding another person's feelings, helping, and the verbal resolution of conflict, was assessed following instruction under three conditions. The E1 group received advance organizer (AO) instruction in general strategies for using the six target social problem solving skills. The E2 group received instruction in particular instances of each skill in a sequence of related activities (RA's). The E3 group were introduced to these skills during socio-dramatic play activities. Following instruction, the E1 and E2 treatment groups were significantly better at using these social problem solving skills than the E3 group, and the E1 group was significantly better at using these skills than the E2 group. There was strong internal consistency of performance amongst the posttest tasks for the E1 group compared to that for the E2 and E3 groups.

Effects of High-Order Rule Instruction on the Development of Social Problem Solving Skills in Preschool Children

In the experiment reported here, principles derived from Ausubel's learning theory (Ausubel, 1963; Ausubel, Novak, & Hanesian, 1978) were applied to an experimental training program for the development of preschool children's social problem solving skills: namely, cooperative play, sharing, taking turns, understanding another person's feelings, helping, and verbal resolution of conflict. These six social competencies were selected on the basis of categories of social behavior used in previous research and a survey of teachers' opinions regarding the most important social skills for preschool children to acquire. The objective of the study was to investigate to what extent preschool children's competencies in dealing with social problems can be improved by training in general strategies for resolving social problems.

A number of researchers have focused on the provision of structured experiences in preschool settings aimed at developing social competence. Some time ago Chittenden (1942) demonstrated the effectiveness of instruction in problem solving strategies in improving preschool children's ability to verbally resolve conflict, share, take turns, and engage in cooperative play. Thompson (1944) used an intervention instruction strategy effectively in improving young children's interpersonal relationships and the cooperative use of play materials. More recently, Shure and Spivack (1972) stated that providing varied social problem solving strategies, even as early as four years, may play a significant role in helping young children adjust to their social world. These two investigators and their colleagues have used this technique to successfully improve young children's ability to conceptualize

alternative solutions to social problems, and use consequential and causal thinking (Shure, Spivack, & Jaeger, 1971), in listening, paying attention, using "if-then" logic, having emotional awareness, in being fair, and in considering alternative solutions to problems (Shure, Spivack, & Gordon 1972), and identifying emotions, thinking about others, thinking in terms of cause and effect relationships, and the consequences of acts (Spivack & Shure, 1974; Shure & Spivack, 1975). With respect to the training of social skills, Paulson (1974) has made two recommendation. First, clearly identify the instructional objectives for social behavior, such as cooperation, sharing, and taking turns. Second, to facilitate transfer of training, instruction should include verbal labels, definitions, and directions. It was considered that a program to train social problem solving, based on verbally organized concepts of social behavior in accord with Ausubelian theory, might be well suited for the purpose of this study.

Ausubel has suggested that, given certain biological constraints, children's development, intellectual and social, is critically dependent upon the cultural milieu in which they grow up and the demands encountered in the cultural environment (Ausubel, 1966). An important determinant in whether or not a child acquires skills to organize environmental information is the manner in which knowledge is structured and sequenced. Since, according to Ausubel, young children are not likely to be efficient in discovering important information, it is considered beneficial to instruct them in concepts, skills, and strategies. In classroom instruction, general ideas are presented first and are followed by progressively more detailed subordinate concepts and factual information (Ausubel, Novak, & Hanesian, 1978). This process of, what Ausubel calls, "progressive differentiation" of superordinate concepts, is

considered essential for meaningful learning for two reasons. First, since individuals tend to organize knowledge in memory as hierarchical structures of concepts, and since superordinate concepts tend to be retained longer in memory than more particular information, it is well to ensure the learner is clear about the defining properties of superordinate concepts. Second, it appears that individuals find it less difficult to grasp the relatedness of the differentiated aspects of a superordinate concept than to form the concept from its differentiated parts. As learning proceeds in this sequence, in a process of integrative reconciliation of parts to whole, significant similarities and differences of related subordinate concepts and factual information are pointed out and the consistencies and inconsistencies of successive ideas resolved. Ausubel has used the term advance organizer to describe the form of the initial presentation of a general idea or superordinate concept. Advance organizer lessons can be followed by related activities during which children are exposed to the more particular, related information that allows them to understand the extent of differentiation of the knowledge previously learned at a general level. The particular information can be subsumed under the existing general ideas. This process of subsumption is expected to result in the clarification of the general ideas, in the likelihood it will be retained long-term in memory, and that it will be easily available for applying to a variety of related information not yet experienced (transfer). This, essentially, is the sequence of advance organizer instruction.

Several studies have reported results supporting the effectiveness of advance organizer instruction in improving preschool children's learning of social studies concepts (Lawton, 1977; Lawton & Wanska, 1979), math concepts (Lawton & Fowell, 1978), natural science concepts (Fowell & Lawton, in

preparation), and logical concepts as described by Piaget (Blue-Swadener & Lawton, 1981; Lawton, Hooper, Saunders, & Roth, 1982; Lawton, in preparation). There has been no previous research in this area examining the effectiveness of advance organizer instruction in improving preschool children's social problem solving.

In this experiment, three questions were asked: Will advance organizer instruction in verbal strategies for solving social problems followed by related learning activities result in improved social problem solving?; will AO instruction followed by RA instruction prove more effective in improving social problem solving than instruction via RA alone?; will either, or both these instructional procedures prove more successful in improving social problem solving abilities than guided-discovery instruction in the context of socio-dramatic play?

METHOD

Subjects

Thirty-five children from middle and upper-middle class families participated in the study. Eighteen attended a formally structured preschool program (Ausubelian) and seventeen attended an informal program (Piagetian). The eighteen children in the Ausubelian (A) program were randomly divided into two experimental groups. The mean chronological age of the E1 group was 43.9 months (SD = 3.58 with a mean Peabody Picture Vocabulary Test raw score of 34.7 (SD = 12.6). For the E2 group, mean CA was 41.8 months (SD = 3.24) and mean PPVT was 35.8 (SD = 12.8). Children in the P program formed the C group. Their mean CA was 46.4 months (SD = 5.2) and mean PPVT was 37.2 (SD = 16.7). There was no significance between group differences in performance on the PPVT,

indicating treatment group homogeneity prior to testing and instruction, at least with respect to this standardized measure.

Method of Instruction

The instructional period was six days. Children in the E1 group received an AO lesson on one of the six target behaviors on each of six days. Each AO lesson lasted approximately fifteen minutes and was followed by related activity sessions (RA's) also lasting 15 minutes. During RA's, children were encouraged to manipulate concrete materials in game like situations requiring the solving of social problems reflecting the general social behavior concepts and social problem solving strategies presented in the preceeding AO lesson. The E2 group received only RA's, lasting about 20-25 minutes.

Children in the C group, participated in large and small group socio-dramatic play activities on each of the six days of the training period. These activities lasted for about 30-40 minutes.

In the limited space available it is only possible to provide brief examples of AO lessons, Related Activities, and socio-dramatic play activities. During AO lessons children were actively involved in question and answer discussions in role play type activities and sometimes in the manipulation of learning materials. The following is a basic AO lesson description used by the teacher to guide the sequence of instruction.

It should be pointed out that the teacher used either real-life examples or fantasy examples for illustrating the characteristics of "taking turns behavior". Children were encouraged to contribute examples and certain examples were briefly acted out in role-play activities.

AO. Taking Turns: We have talked about how sometimes we can all do

something or have something or use something together at the same time by sharing it. Who remembers one way we can share things? (By dividing it) Sometimes, though, we all want to do something but we cannot all do the same thing at the same time. Sometimes we have to TAKE TURNS. When we TAKE TURNS first one person does something and then another person does it. Everyone gets a turn to do it but just not at the same time. What would happen if everyone wanted to talk at the same time? Come through the door at the same time? Get a drink at the same time? Go to the bathroom at the same time? Sit in my lap at the same time? Wash their hands at the same time? Pour juice at the same time? Hold the guinea pigs at the same time? Many times when people do things together in order for everyone to get to do something they have to TAKE TURNS, first one person and then another. People must decide who will take the first turn and when that turn will be over. (For the interested reader, descriptions of all six lessons are available from the first author.)

Related activities following this AO were as follows:

1. Play a game that requires TURN TAKING such as spinning a number marker, throwing a die, drawing a card, and telling parts of a previously heard story in correct sequence.

2. Play a circle game such as "who stole the cookie from the cookie jar". In this game, children are named, in turn, as perhaps having stole a cookie from the jar and the child responds, "Who me?", and the rest of the children chant, "Yes, you!", to which there is a disclaimer, and another possible suspect is named. The teacher emphasizes that, to play this game, children

have to take turns being the suspect.

3. Take turns suggesting ideas in games, such as choosing animals in "Old MacDonald had a farm".

4. Play a building game where children take turns selecting and collecting materials and constructing parts of an agreed upon building.

5. Take turns in the various activities in a sequence leading to the baking of cookies.

For each of these activities the teacher discusses with the children various aspects of "taking turns" and why "taking turns" is important for the success of an activity.

During socio-dramatic play activities E3 group children were encouraged through guided-discovery instruction to consider social behaviors corresponding to the six target social behaviors; they were not presented directly information on these behaviors nor taught strategies for solving social problems. Reference to the solving of social problems was made via indirect questions and suggestions in a spontaneous, on the spot manner as they arose in the specific context of a particular play activity. Teachers stepped in when danger was imminent or when children needed emotional support or help in interpreting a social problem. Rather than provide rules for solving social problems, attempts were made to stimulate children first to recognize the conflict that had arisen and second, to construct their own solution. For example, a teacher might say, "Sara is crying. What do you think is wrong? Is there something we can do?".

Active listening involved, for example, interpreting for one child what another child might be feeling. For example, a teacher might say to an aggressor, "Are you angry? Jimmy doesn't know why you hit him", or to a

victim, "Joe seems to be mad at you. Why do you think he's hitting you?". If one child was upset because another child was not helping to clean up, a teacher might say, "That doesn't seem fair to you, does it? Why don't you tell Susie it's bothering you?", or say to the uncooperative child, "This is your room, too. Do you think it is cleaned up? What else needs to be put away?". In a conflict over possessions, a teacher might offer suggestions such as, "Mary is using it first. When she's finished maybe she'll feel like coming to get you so you can use it.", or "Can you think of a way that you can both use it?", but would not insist upon these suggestions being accepted and put into action. Social responses and "rules" were thus engendered and enforced more by designs internal to the children rather than external.

The A0 lessons and Related Activities were taught by the second author (trained to teach in the Ausubelian Program), who also conducted the testing procedures. A cooperating teacher in the Piagetian Program organized the socio-dramatic play activities with the E3 group children. Teaching sessions were observed and it was ascertained that both teachers closely followed their stated objectives and selected and organized lesson content and learning procedures as predicted.

Tests

Research by Feigenbaum, Geiger, and Crevosahay (1970) has indicated that 3 and 5 year olds understand child-child social interactions better than child-adult or adult-adult interactions. Various training procedures using peer conflict situations have been used successfully by Spivack and Shure (1974; story completion problems), Chittendon (1942; solution of conflicts over possession in doll play situations), Friedrick and Stein (1975; assessment of

helping behavior using a puppet in fantasy contexts), and, Ball and Bogatz (1970; influencing social behavior by children's observation of puppet segments teaching cooperation in Sesame Street television programs).

On the basis of procedures used in this previous research, for both pre- and posttests, six short story situations, each one with two parallel forms, were enacted by puppets (manipulated by the tester in testing situations with individual children) who needed the child help them think of a way to solve a social conflict problem. The puppets had minimal and abstract facial features of neutral expression and were devoid of sex or age characteristics which might bias the child's responses. Puppets alternated personalities and character roles throughout the series of stories to avoid the formation of a "good guy" or "bad guy" image which also might influence a child's responses.

Each story was designed to tap one of the six target social skills: sharing, taking turns, cooperative play, understanding others' feelings, helping, and resolving interpersonal conflict by means of verbal communication rather than physical aggression. For example, a pretest "taking turns", problem solving task went as follows:

> One day Orangey and Reddy decide to cut pictures out of some old magazines they are looking at. They go to the shelf where the scissors are, but there is only one pair left. "I get it" says Orangey. "No, I get it" says Reddy. What happens next?

For each of the six social skills there were two problem solving tasks in story form as in the above example at pretesting and posttesting. For each task a response that included the relevant target behavior received a score of 1, if not, the child received a score of 0 for that story. With six situations

for pre- and posttests, respectively, each one presented in alternate form, the score for each situation ranged from 0-2.

It should be added that none of the test materials or social problem solving situations were the same as teaching materials and social problem solving situations used for instruction.

PROCEDURE

For both pre- and posttests, children were tested individually in two puppet play sessions--the first one week and the second the following week. Each testing session of six social problem solving tasks lasted about 20 minutes. Pretests were followed by a six day instructional period which, in turn, was immediately followed by posttests. The tasks for both pre- and posttesting were presented in random order, that for posttests differing from the pretest order. Children's responses to the problem situations were tape recorded. Two evaluators separately scored all test protocols. Anonymity of treatment groups was obtained by coding each child's test protocol and responses were randomly ordered prior to scoring. A between-evaluation agreement on scoring of .99 was obtained.

RESULTS

In analyzing data from the study, two logical comparisons of treatment groups were made. The first contrast consisted of combining the two experimental groups and comparing the combined E group to the C group. The second contrast compared the E1 Group (AO + RA's) with the E2 Group (RA's only).

Preliminary analyses of data were performed to establish whether any differences existed between the treatment groups prior to training. A one-way ANOVA of pretest scores indicated no significant differences for either of the two contrasts. Pretest scores are presented in Table 1.

Insert Table 1 about here

A one-way ANOVA of the posttest data (see Table 1) revealed significant differences between the combined treatment groups and the C group $F(1,33) = 50.4$, $p<.001$, favoring the combined treatment groups, and between E1 and E2, $F(1,16) = 44.2$, $p<.001$, favoring the E1 group. Post-hoc analyses (T-tests, df = 33) indicated significant differences between the combined E groups and the C group ($P<.01$ in each case) for each of the six target social skills, except "taking turns" ($p<.07$). The E1 Group's performance was significantly superior to that of the E2 group on all tasks ($p<.01$), except "feelings" ($p<.31$) and "helping" ($p<.09$). Pearson product moment correlations were computed between tests for each treatment group. It is clear from the results shown in Table 2 that there is greater internal consistency of performance on the six posttests for the E1 group followed by the E2 group and a much less degree of internal consistency for the C group.

Insert Table 2 about here

DISCUSSION

In response to the three questions asked, it is clear that, first, the development of social problem solving skills in preschool children can be facilitated by advance organizer instruction providing general strategies for dealing with interpersonal conflict situations. Second, advance organizer lessons followed by related learning activities, aimed at providing practice in applying a general social problem solving strategy in various conflict

situations--thus differentiating the use of a general strategy--proved to be more efficacious in modifying children's social problem solving responses than either related learning activities alone or social problem solving in the context of socio-dramatic play activities. Although there were slight differences in the total overall time for the three instructional procedures, it is unlikely that any group received extra tuition or practice that might be considered to have possibly affected posttest performance.

Of importance here is the fact that preschool children who were instructed in the use of general strategies for cooperative play, sharing, taking turns, understanding others' feelings, helping, and the verbal resolution of conflicts effectively used these strategies, at least in solving hypothetical social problems in puppet play situations. The high degree of internal consistency of performance on the six social problem solving tasks is a clear indication of the power of the general strategies learned from AO instruction. In designing AO instruction it is important to take into account the subject area, such as the six social behaviors referred to in this investigation, and the strategies necessary to solve problems pertaining to these social behaviors. In other words, it is not sufficient merely to identify prosocial behavior concepts, such as sharing, helping, and so on, but also to identify social problem solving strategies associated with each concept. The importance of making this distinction has been made clear in previous research and theoretical discussion (e.g., Blue-Swadener & Lawton, 1982; Lawton, hooper, Saunders, & Roth, 1982; Lawton, in preparation; Scandura, 1973, 1977, 1978).

It would appear that a structured program specifically designed to teach general strategies for resolving social problems to preschoolers can be beneficial in tapping the social potential which exists even in very young

children. This finding has important implications for early childhood education. Even in nursery school programs such as Montesorri programs, in which the major goals are cognitively and perceptually oriented, an attempt is made to facilitate social interaction because it is estimated that thirty to forty percent of the nursery school child's free play involves social interaction with children and adults. Fennema-Reukert (1978) found that day care and nursery school staff believed that both the ideal and the actual amount of time children spend playing or interacting with other children to be higher than the percentage which was observed. Children were observed spending less time playing with other children than playing individually or in teacher-directed large group activities.

There are limitations to this study that should be mentioned since they have important implications for future research. The six social behaviors identified represent rather broad categories of behavior. We believe that each behavior category would benefit from further differentiation and we have already begun to identify types of subordinate behaviors that characterize each general behavior. For example, a social behavior such as helping might differ in the amount and degree of persistence, might be done with respect to inanimate objects (putting toys away), or to people (helping another child solve a problem), as a matter of course or grudgingly; and a "helping hand" might be received willingly or refused. In future research, already being planned, we intend to make finer discriminations of qualitatively and quantitatively distinct behaviors for each of the six social skills. Weinheimer (1972) has also reminded us that acts of adults and children may be mediated differently although manifested the same which emphasizes the hazard of misunderstanding the intention and meaning of instigated social interaction and

subsequent responses. Inevitably future research must go beyond simply determining whether or not a social behavior was emitted and delve into the underlying reasons.

It seems necessary, therefore, to take into account dyadic interactions in social situations. To a certain extent such interactions occured in the testing situations between puppets, but they were always negative. In spontaneus social behaviors a particular social interaction may be instigated by a child in a positive or negative fashion, and reciprocal social behaviors from another child may likewise be positive or negative. It would also be useful to observe dyadic social interactions between child and adult (which could be done for both hypothetical and real-life situations).

Finally, it should be added that an important extension to the research reported here would be the observation and analysis of children's social problem solving behavior before and after instruction in naturalistic settings. In future research, we intend to pay particular attention to the possible immediate and long-term effects of this type of instruction on children's social problem solving skills in various real-life milieu and situations.

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Table 1

Pretest and Posttest Means and SD's of Social Skills

		SOCIAL SKILLS											
		Pretest						Posttest					
Group	N	C	S	T	F	H	VR[1]	C	S	T	F	H	VR
E1	9	.44 (.09)	.44 (.13)	.67 (.56)	1.67 (.73)	.44 (.12)	.22[2] (.25)	1.67 (.71)	2.00 (.00)	1.78 (.87)	2.00 (.00)	1.67 (.47)	1.11 (.52)
E2	9	.22 (.31)	.67 (.47)	.44 (.24)	1.67 (.81)	.67 (.21)	.22 (.08)	.56 (.31)	.78 (.63)	.44 (.32)	1.67 (.97)	1.22 (.83)	.00 (.00)
E3	17	.22 (.11)	.59 (.32)	.24 (.09)	1.00 (.65)	.47 (.23)	.12 (.03)	.41 (.09)	.53 (.26)	.65 (.53)	1.06 (.68)	.29 (.08)	.00 (.00)

1. C = Cooperative Play
   S = Sharing
   T = Taking Turns
   F = Understanding Another Person's Feelings
   H = Helping
   VR = Verbal Resolution of Conflict

2. SD's are in parentheses.
   Score range for each skill: 0-2

TABLE .2

Pearson Product Moment Correlations Between Posttests

for Each Treatment Group

	E1						E2						E3					
	C	S	T	F	H	VR	C	S	T	F	H	VR	C	S	T	F	H	VR
C		.88**	.72**	.86**	.89**	.68*		.76**	.67**	.89**	.59*	--[1]		.80**	.72*	-.35	.33	--[1]
S			.87**	1.00**	.73**	.71*			.63*	.69*	.43	--			.68*	-.39	.23	--
T				.79**	.85**	.64*				.89**	.56	--				.76**	.22	--
F					.87*	.73*					.67*	--					-.18	--
H						.61*						--						--
V																		

* p .05
** p .01

1. NOTE: It was not possible to compute correlations in these cases due to zero scores on the VR test for E2 and E3 groups.